



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,445	04/01/2004	Manuel Schmidt	4674	1606

21553 7590 04/17/2007
FASSE PATENT ATTORNEYS, P.A.
P.O. BOX 726
HAMPDEN, ME 04444-0726

EXAMINER

YEALY, CHRISTOPHER M

ART UNIT	PAPER NUMBER
2878	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

TH

Office Action Summary	Application No. 10/817,445	Applicant(s) SCHMIDT ET AL.	
	Examiner Christopher M. Yealy	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/1/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The disclosure is objected to because of the following informalities: Section headings are missing from the specification.

Appropriate correction is required.

Art Unit: 2878

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Sensor Arrangement to Prevent Reference Light Incident on Side of Photodiode.

Claim Objections

Claims 1-11 are objected to because of the following informalities:

Claim 1, last line: "on the photodiode from the side" should read "on the side of the photodiode"

Claims 1-11: The claims should not contain reference characters in order to define the claimed invention.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 9, and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **claim 1**, the phrases "in particular" and "essentially not" render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

Regarding **claim 9**, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, **claim 10** recites the broad recitation "chamfered wall," and the claim also recites a "facet" which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-4, 10, and 11** are rejected under 35 U.S.C. 102(b) as being anticipated by **Stauffer (U.S. Patent # 4,752,799)**.

Regarding **claim 1**, Stauffer discloses (see Figure 9) a sensor arrangement comprising a carrier (420) on which a photodiode (480), a first light emitting diode (426) for the transmission of a measuring light beam, in particular a pulsed measuring light beam, and a second light emitting diode (444) for the transmission of a reference light beam, in particular a reference light beam pulsed offset in time with respect to the measuring light beam, and a light transmitting housing (402) enclosing the photodiode (480) and the two light emitting diodes (426, 444) are arranged, wherein the second light emitting diode (444) is arranged on the carrier (420) such that the reference light transmitted by it is essentially not incident on the photodiode (480) from the side (column 10, lines 49-66; column 11, lines 3-22).

Regarding **claim 2**, Stauffer discloses (see Figures 1, 9) that the photodiode (34, 480) is arranged on a first plane of the carrier (420) and the second light emitting diode (12, 444) is arranged on a second plane (a distance L left of the first light emitting diode) of the carrier (420) (column 2, lines 51-59; column 10, line 66 – column 11, line 2).

Regarding **claim 3**, Stauffer discloses that the two planes (separated by a distance L) are offset with respect to one another at least by the height of the photodiode (480) or by the height of the second light emitting diode (444) (figure 9; column 3, lines 28-37).

Regarding **claim 4**, Stauffer discloses that the second light emitting diode (444) is arranged on a higher plane (closer to the surface through which light is transmitted) than the photodiode (480) (figure 9).

Regarding **claim 10**, Stauffer discloses that the housing (402) is formed with a chamfered wall (404), namely with a so-called facet, in the region of the second light emitting diode (444) (figure 9; column 10, lines 49-61).

Regarding **claim 11**, Stauffer discloses that a lens (617) for the focusing of useful light is arranged in front of a first light emitting diode (610) (figure 11; column 14, lines 1-9, 59-64).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Stauffer (U.S. Patent # 4,752,799)** in view of **Deese (U.S. Patent # 5,806,965)**.

Regarding **claims 5-7**, Stauffer discloses the device of claim 1, but does not disclose that the carrier is a circuit board.

Deese teaches a light emitting diode arrangement wherein a circuit board is provided as a carrier. The circuit board is formed in the manner of a sandwich board of

Art Unit: 2878

at least two layers, and the layers of the carrier board are laminated to one another (column 1, lines 55-67).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Stauffer with a laminated, sandwich circuit board carrier, as taught by Deese, in order to form a rigid carrier with integrated wiring for the connected elements.

5. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Stauffer (U.S. Patent # 4,752,799)** in view of **Reime (Pub # US 2003/0020004 A1)**.

Regarding **claim 8**, Stauffer discloses the device of claim 1, but does not disclose that the carrier consists of a material impermeable to light.

Reime teaches a sensor arrangement wherein the carrier consists of a material impermeable to light, and extends into a barrier (150) between the first light emitting diode (140) and the photodiode (2) (figure 10; paragraph 84).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Stauffer with a light impermeable carrier, as taught by Reime, in order to prevent the light emitting diodes from transmitting light horizontally onto the photodiode.

6. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Stauffer (U.S. Patent # 4,752,799)** in view of **Jachimowicz et al. (U.S. Patent # 5,486,946)**.

Art Unit: 2878

Regarding **claim 9**, Stauffer discloses the device of claim 1, but does not disclose that the housing is formed by an encapsulant of material impermeable to light.

Jachimowicz et al. teaches a sensor arrangement wherein the housing (41) is formed by an encapsulant of material impermeable to light (figure 4; column 5, lines 57-66).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Stauffer with a light impermeable housing, as taught by Jachimowicz et al., in order to prevent ambient light from reaching the photodiode.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Grabmaier et al. (U.S. Patent # 6,373,215 B1) and Murakami et al. (U.S. Patent # 6,362,468 B1) disclose sensor arrangements with two light emitting diodes and a photodiode, wherein the light emitting diodes are on a higher plane than the photodiode and do not transmit light onto the side of the photodiode.

Schaefer (U.S. Patent # 7,123,351 B1) discloses a sensor arrangement with two light emitting diodes and a photodiode, wherein one of the LEDs is in the plane of the photodiode, and the other LED is below the plane of the photodiode.

Art Unit: 2878

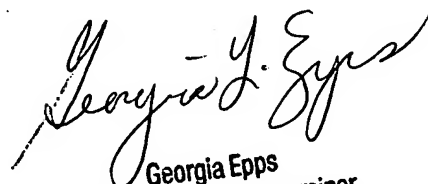
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Yealy whose telephone number is (571) 270-1324. The examiner can normally be reached on Monday - Thursday, 7:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Christopher M. Yealy
Art Unit 2878
April 5, 2007



Georgia Epps
Supervisory Patent Examiner
Technology Center 2800